

Application Number 10/799,335
Amendment dated 21 December 2006
Reply to Office Action of 1 November 2006

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Remarks/Arguments

In response to the Final Office Action mailed on 1 November 2006, Applicants submit the following remarks. No claims have been added, cancelled or amended in this paper. Therefore, Claims 1–19 and 21–53 remain pending in this application. Independent Claims 1, 19, 39 and 44 stand rejected as being anticipated by U.S. Patent Application Publication 2003/0157787 ("Murthy").

The Examiner takes the position that because the teachings combined to meet the claims are found within the detailed description of a single patent reference, no suggestion to combine is needed, and the rejection can be made under 35 U.S.C. § 102. As is clear from the legal citation below, the rejection can only be made under 35 U.S.C. § 103. There is no suggestion in the art for the combination of features that the Examiner asserts. Indeed, logic and the Murthy reference itself make clear that the combination is without motivation.

Murthy discloses various methods for forming germanium films over a graded silicon germanium buffer layer on a semiconductor substrate. Figure 1 and Paragraphs [0021] – [0025] of Murthy describe a method for blanket deposition of such a structure. As indicated by operational block 108 of Figure 1, this embodiment involves simultaneously providing both a silicon source gas and a germanium source gas to a deposition chamber. Figure 3 and Paragraphs [0027] – [0031] describe a method for selective deposition of a graded SiGe—Ge film over exposed regions defined by a SiO₂ mask. As indicated by operational blocks 306 and 308 of Figure 3, this embodiment involves simultaneously providing a silicon source gas, a germanium source gas and an etchant to a deposition chamber. It is clear to the skilled artisan that the etchant for the second embodiment is used for the purpose of achieving selective deposition. See Paragraph [0027].

In contrast to the disclosure of Murthy, independent Claims 1, 19, 39 and 44 all recite a method that involves blanket deposition using both a germanium source gas (or a germanium precursor) and an etchant. The Examiner acknowledges that Murthy does not disclose a single embodiment that includes these features. Instead, the

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Examiner has taken the position that the teachings of Murthy's blanket deposition embodiments (without use of an etchant) and Murthy's selective deposition embodiments (with use of an etchant) are "combinable" and "incorporate each other's basic techniques when need be."

At the outset, Applicants note that the Examiner's position flies in the face of the express teachings of Murthy, which specifically discloses that, in the selective deposition embodiment, the etchant "is used to help maintain the selectivity in the deposition of the graded SiGe—Ge film" by etching away SiGe and/or Ge that forms on the SiO₂ mask, and by suppressing the nucleation of the graded SiGe—Ge over the SiO₂ mask. See Paragraph [0027] of Murthy; emphasis added. That is, Murthy unequivocally teaches that the purpose of including the etchant is to achieve selective deposition. Certainly this cannot support the Examiner's assertion that the use of an etchant is "combinable" with blanket deposition. The only reason that Murthy discloses use of an etchant is to achieve selective deposition.

Moreover, to establish anticipation, the Examiner must identify prior art that discloses Applicants' claimed invention identically, with the claimed elements arranged as required by the claim. See MPEP 2131.01. As described above, Murthy clearly does not disclose blanket deposition using both a germanium source gas (or a germanium precursor) and an etchant. Applicants are claiming not just the elements of a germanium source gas (or a germanium precursor) and an etchant, but rather are claiming the arrangement of these features in the context of blanket deposition; it is undisputed that Murthy does not disclose this arrangement.

The requirement that the prior art disclose the claimed elements arranged as claimed was applied in *In re Arkley*, 172 U.S.P.Q. 524 (C.C.P.A. 1972). In *Arkley*, the Court found that Claim 30 of Arkley's patent application was not anticipated by the Flynn reference, despite the fact that all the claimed elements could be found (in different embodiments) in the Flynn reference. Specifically, the Court noted that the cephalosporin C-type compounds disclosed in Flynn's Examples 4 and 10 were the exact precursors of Arkley's claimed cephalosporin C(A)-type compound, only to the extent that the cephalosporin C-type compounds were reacted with a "particular tertiary

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amine which also must be selected". Elsewhere in Flynn, it was disclosed that pyridine, which is a tertiary amine, can be used to convert a different cephalosporin C-type compound into a cephalosporin C(A)-type compound. The Court noted that there was nothing in Flynn's teachings (a) that would "clearly and unequivocally" direct an ordinarily skilled artisan to use pyridine to convert the cephalosporin C-type compounds disclosed in Examines 4 and 10, or (b) that would indicate that Flynn ever selected pyridine himself for this specific purpose. See 172 U.S.P.Q. at 526-527.

The facts of this case are analogous to those of *Arkley*. In particular, Murthy discloses use of a germanium precursor and an etchant in a selective deposition process. A blanket deposition process is mentioned elsewhere in Murthy. However, there is nothing in Murthy's teachings that would direct an ordinarily skilled artisan to use the etchant in the blanket deposition process. To the contrary, Murthy's statements regarding the purpose of including the etchant ("to help maintain the selectivity in the deposition") would actually suggest to an ordinarily skilled artisan to not use the etchant in a blanket deposition process. Furthermore, there is nothing in Murthy indicating the Murthy ever used the etchant in a blanket deposition process.

Based on the foregoing, Applicants respectfully submit that Murthy cannot anticipate independent Claims 1, 19, 39 and 44, and respectfully request that the rejection of these claims be withdrawn. Furthermore, Applicants submit that Claims 2-18, 21-38, 40-43 and 45-53 are allowable over any rejections based wholly or partially on Murthy for the same reasons that the respective independent Claims are allowable, in addition to reciting further distinguishing features of particular utility. Thus, Applicants respectfully request that the rejections of Claims 2-18, 21-38, 40-43 and 45-53 be withdrawn as well.

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In view of the foregoing remarks, the Applicants submit that this application is in condition for allowance, and respectfully request the same. If, however, some issue remains that the Examiner feels can be addressed by an Examiner's Amendment, the Examiner is cordially invited to call the undersigned for authorization.

Respectfully submitted,

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